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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,287	09/18/2006	Tokuyuki Nakayama	034145.004	8454

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EXAMINER	
NELSON, MICHAEL B	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
04/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,287	NAKAYAMA ET AL.	
	Examiner	Art Unit	
	MICHAEL B. NELSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-6,8-11,13-22 and 24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6,8-11,13-22 and 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/15/09; 03/16/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendments filed on 01/15/09 have been entered. Claims 1, 2, 4-6, 8-11, 13-22 and 24 are currently under examination on the merits. Claims 3, 7, 12 and 23 are cancelled. Applicant's amendments have resolved the multiple dependency issue and the objection is therefore withdrawn. Certain 112 2nd paragraph issues have been obviated by applicant's amendments but other issues remain (see below). Please note that human translations of the prior art documents have been provided to replace the machine translations used in the previous office action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 recites a layered structure including a gas barrier film and describes the layered structure as having a resin film "into which a gas barrier film is inserted." This phrase is vague and indefinite in that it is unclear in what manner the gas barrier film interacts with the resin plate. From the specification it is believed that the gas barrier film is meant to lie in between the transparent conductive stack and the substrate (Fig. 2). If this is correct, it would be remedial to amend claim 16 to remove the limitations based on "insertion" and replace them with limitations directed towards the gas barrier film being "in between" the transparent conductive layers and the substrate.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 2, 4, 5, 8-11, 13-15, 19-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toppan Printing Co (JP 2000-106034), see human translation in view of Naishi Minami (JP 09-259640), see human translation.

Regarding claim 1, Toppan Printing Co. discloses a transparent conductive film ([0001]) with a transparent oxide film, a metallic film and another transparent oxide film coated onto a substrate ([0026]). As the materials for the transparent oxide film, gallium and indium are disclosed as being sputtered with oxygen to produce oxides ([0020]-[0021]). Additionally, Toppan Printing Co discloses that there be a three layer structure ([0026]). The metal layer is disclosed as being an alloy of silver, copper and gold with ratios of 98.5%, 0.5% and 1.0% respectively ([0027]). The thickness of the metal layer is disclosed as being 13-15 nm ([0026]).

Toppan Printing Co does not disclose the specific ratio of Gallium in the overall oxide layer. Naishi Minami discloses a transparent conductive film with a Gallium and Indium oxide mix having a Gallium to Indium ratio of between 15 and 49% ([0004]). The film is disclosed as showing improved uniformity and high light transmittance ([0003]).

The inventions of both Toppan Printing Co and Naishi Minami are drawn to the field of transparent conductive films and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the oxide layer of Toppan Printing Co by using the Gallium content as taught by Naishi Minami for the purposes of imparting improved uniformity and high light transmittance.

Regarding the transmittance and surface resistance, while modified Toppan Printing Co does not explicitly disclose the instant claimed values, given the substantially similar composition (i.e. metallic film layer, oxide film layer, thicknesses and overall layered structure) of the invention of modified Toppan Printing Co with the instant application, one having ordinary skill in the art would expect the transparent conductive film to exhibit the claimed properties.

Regarding claims 2, 4, 5, 8-11, 13-15, 19-22 and 24, modified Toppan Printing Co discloses all of the limitations as set forth above. Additionally, Toppan Printing Co discloses that there be a three layer structure ([0026]). The metal layer is disclosed as being an alloy of silver, copper and gold with ratios of 98.5%, 0.5% and 1.0% respectively ([0027]). The thickness of the metal layer is disclosed as being 13-15 nm ([0026]). The use in transparent electrodes is disclosed ([0001]).

Regarding the transmittance and surface resistance, while modified Toppan Printing Co does not explicitly disclose the instant claimed values, given the substantially similar composition (i.e. metallic film layer, oxide film layer, thicknesses and overall layered structure) of the invention of modified Toppan Printing Co with the instant application, one having ordinary skill in the art would expect the transparent conductive film to exhibit the claimed properties.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toppan Printing Co (JP 2000-106034), see human translation, in view of Naishi Minami (JP 09-259640), see human translation, as applied to claim 3 above, and further in view of Asahi Glass Co. (JP 09-291356), see machine translation.

Regarding claim 6, modified Toppan Printing Co discloses all of the limitations as set forth above. Toppan Printing Co does not explicitly disclose that the metallic film be a Ni and Au laminate. Asahi Glass Co discloses a transparent conductive film with a metallic laminate of Au and Ni ([0029]-[0032]). The film of Asahi Glass Co is disclosed as being excellent in, inter alia, alkali resistance ([0009]).

The inventions of both modified Toppan Printing Co and Asahi Glass Co are drawn to the field of transparent conductive films and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the metallic layer of modified Toppan Printing Co by using the metallic Ni, Au laminate of Asahi Glass Co for the purposes of imparting improved alkali resistance.

9. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toppan Printing Co (JP 2000-106034), see human translation, in view of Naishi Minami (JP 09-259640), see human translation, as applied to claim 1 above, and further in view of Nippon Hoso Kyokai (JP 2004-127719), see English language equivalent Fujikake et al. (U.S. 2006/0152136).

Regarding claims 16-18, modified Toppan Printing Co discloses all of the limitations as set forth above. Modified Toppan Printing Co does not disclose the inclusion of a gas barrier film with the transparent conductive film. Fujikake et al. discloses a transparent conductive film on which it was known to use substrates made of, inter alia, polycarbonate ([0003]). The gas barrier layer is disclosed as being made of inter alia, silicon oxide ([0041]) and the placement of the gas barrier film, 2, within the structure of the stack in Fig. 1 shows that it is in between the transparent conductive layer, 1, and the resin base, 3 ([0049]). The film of Fujikake et al. is disclosed as exhibiting improved heat resistance and low moisture absorbance ([0013]).

The inventions of both modified Toppan Printing Co and Fujikake et al. are drawn to the field of transparent conductive films and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the transparent conductive film of modified Toppan Printing Co by including a gas barrier layer as taught by Fujikake et al. for the purposes of imparting improved heat resistance and lowered moisture absorbance.

Response to Arguments

10. Applicant's arguments filed on 01/15/09 have been considered but are not found to be persuasive.

11. Regarding applicant's arguments against the 112 2nd rejection of the phrase "inserted" the examiner maintains that such limitations is vague and indefinite in that it is unclear in what manner the layers are assembled. "Inserted" implies that the gas barrier film is placed within a cavity formed by the resin film. Since it is believed that the gas barrier film lies in between the resin film and the substrate, applicant is advised to more clearly recite this feature (i.e. the gas barrier film lying in between the substrate and the resin film). Applicant's citation of the instant specification does not provide additional definition to the vague claim language. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). While the cited portion of the specification may provide the examiner with proof of what is intended to be the claimed feature, the fact remains that the instantly recited claim limitation does not clearly describe this feature.

12. Regarding applicant's arguments against the combination of the 034 reference and the 640 reference, the examiner maintains that the combination is valid. Applicant begins by arguing that the 034 reference does not disclose Gallium in detail and instead focuses on mixed oxides using cerium. Firstly, the examiner notes that the second reference cures the deficiencies of the first reference with respect to the amount of disclosure of gallium mixed oxides. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Secondly, the examples using cerium are not necessarily preferred over the use of other oxides. The mention of the beneficial amorphous state could be obtained by using any other mixed oxide and the combinations used in the examples are never disclosed as excluding other oxides in addition to the cerium. While Gallium is not exemplified, this does not negate a finding of obviousness under 35 USC 103 since a preferred embodiment such as an example is not controlling. Rather, all disclosures "including unpreferred embodiments" must be considered. In re Lamberti 192 USPQ 278, 280 (CCPA 1976) citing In re Mills 176 USPQ 196 (CCPA 1972). Even if cerium were explicitly disclosed as a preferred mixed oxide component that does not prevent the secondary reference from teaching a mixed oxide composition that is advantageous for other reasons.

13. Applicant also argues that the mixed oxide composition of the 640 reference is not amorphous and therefore would not be obvious for a combination with the 034 reference. The examiner disagrees. At [0007], the 640 document clearly states that the thin film is amorphous. This would lead one having ordinary skill in the art to believe that the same beneficial properties realized by the amorphous nature of the mixed oxide film of the 034 reference ([0023]) would be realized by the amorphous film of the 640 document. Regardless, the 640 document recites other beneficial properties, including high transmittance ([0003]), which would motivate the combination. Applicant's assertion that the film is "fundamentally crystalline" is without evidence and inadequate given the clear disclosure of the 640 document's film being amorphous. The examiner would also like to point out that there is no mention in the claims that the film be amorphous or crystalline. Although the claims are interpreted in light of the specification,

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

14. Regarding applicant's arguments that the transmittance is not being read upon by the prior art, the examiner maintains that given the substantially similar composition of the stacked layer structure of the prior art with the instant invention and given the disclosed nature as being "transparent" electrodes and the disclosure of the 640 reference for high transmittance, one having ordinary skill would expected the modified prior art's stacked layers to be made to possess the claimed properties.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

/MN/
03/26/09